**EXPERT SYSTEM FOR PRESCRIBING MEDICINE FOR GIVEN SYMPTOMS**

**1.PROBLEM STATEMENT:**

* The project is mainly focused on expert system in medical field where the person or patient login to the system
* The person or patient must select what are the symptoms for him that field information will be given to expert system.
* Expert system will diagnose what type of disease using medical database.
* The medical database will get all the information about medicine from pharmacy module and generate the prescription for the right symptoms and it gives to expert system.
* The medical database gives types of disease information to expert system.

**2 Actors**

**2.1 patient/Client**

**2.2 Expert System**

**3 Preconditions**

There is an active network connection to the Expert System.

The ATM has cash available.

**4 Basic Flow of Events**

1. The use case begins when patient opens the app.

2. Use Case: Validate User is performed.

3. The ATM displays the different alternatives that are available on this unit. In this case the  Bank Customer always selects “Withdraw Cash”.

4. The ATM prompts for an account.

5. The Bank Customer selects an account.

6. The ATM prompts for an amount.

7. The Bank Customer enters an amount.

8. Card ID, PIN, amount and account is sent to Bank as a transaction. The Bank Consortium  replies with a go/no go reply telling if the transaction is ok.

9. Then money is dispensed

10. The Bank Card is returned.

11. The receipt is printed

12. The use case ends successfully

**5 Alternative Flows**

**5.1 Invalid User**

If in step 2 of the basic flow Bank Customer the use case: Validate User does not complete  successfully, then

1. the use case ends with a failure condition

**5.2 Wrong account**

If in step 8 of the basic flow the account selected by the Bank Customer is not associated with this  bank card, then

1. the ATM shall display the message “Invalid Account – please try again”

2. The use case resumes at step 4

**5.3 Wrong amount**

If in step 7 in the basic flow, the Bank Customer enters an amount that can't be 'created' with the  kind of in the ATM, then

1. the ATM shall display the message indicating that the amount must be a multiple of the  bills on hand, and ask the Bank Customer to reenter the amount

2. The use case resumes at step 7

**5.4 Amount Exceeds Withdrawal Limit**

If in step 7 in the basic flow, the Bank Customer enters an amount that exceeds the withdrawal limit, then

1. the ATM shall display a warning message, and ask the Bank Customer to reenter the

amount

2. The use case resumes at step 7

**5.5 Amount Exceeds Daily Withdrawal Limit**

If in step 8 in the basic flow, the Bank response indicates the daily withdrawal limit has been  exceeded (this is determined by the Bank and depends upon the specific account), then

1. the ATM shall display a warning message, and ask the Bank Customer to reenter the

amount

2. The use case resumes at step 7

**5.6 Insufficient Cash**

If in step 7 in the basic flow, the Bank Customer enters an amount that exceeds the amount of cash  available in the ATM, then

1. the ATM will display a warning message, and ask the Bank Customer to reenter the

amount

2. The use case resumes at step 7

**5.7 No Response from Bank**

If in step 8 of the basic there is no response from the Bank within 3 seconds, then

1. the ATM will re-try, up to three times

2. If there is still no response from the Bank, the ATM shall display the message “Network  unavailable – try again later”

3. the ATM shall return the card

4. the ATM shall indicate that it is “Closed”

5. the use case ends with a failure condition

**5.8 Money Not Removed**

If in step 9 of the basic flow the money is not removed from the machine within 15 seconds, then  1. the ATM shall issue a warning sound and display the message “Please remove cash”

2. If there is still no response from the Bank Customer within 15 seconds the ATM will re tract the money and note the failure in the log

3. the use case end with a failure condition

**5.9 Quit**

If at point prior to step 8 in the basic flow the Bank Customer selects Quit, then

1. the ATM shall print a receipt indicating the transaction was cancelled

2. the ATM shall return the card

3. the use case ends

**6 Post-conditions**

**6.1 Successful Completion**

The user has received their cash and the internal logs have been updated.

**6.2 Failure Condition**

The logs have been updated accordingly.

**7 Special Requirements**

The ATM shall dispense cash in multiples of $20.

The maximum individual withdrawal is $500.

The ATM shall keep a log, including date and time, of all complete and incomplete transactions  with the Bank.

**2.0VERALL DESCRIPTION:**

**2.1 MODULES**:

* Symptoms
* Expert System
* Medical DB
* Prescription
* Pharmacy

**2.2 MODULE DELIVERABLES:**

**SYMPTOMS:**

Basic Flow:

Patient must enter the symptoms that occurs for him. The symptoms must be exact so that it can be verified.

Alternate Flow:

If there are 4 symptoms then the patient is having big problem disease so,exit. If there are more than 4 then it is a serious problem

Precondition:

All the symptoms related to the disease are entered. Patient must enter the symptoms that occurs correctly.

Postcondition:

If the symptoms are corresponding to particular disease they are entered in expert system.

**PRESCRIPTION:**

Basic Flow:

The medicine is prescribed based on the symptoms.Medical prescription is given by expert system.

Alternate Flow:

If medicine is not available then exit. If there is no medicine then it comes under stock unavailable condition so update information in medical DB.

Precondition:

If medicine is only available in pharmacy it will generate prescription.If medicine is not available then store the details in expert system.

Postcondition:

If medicine are prescribed it will give to patient. The patient then gets the prescribed medicine in the shop.

**PHARMACY:**

**Basic Flow:**

Based on disease it will give medicine. Pharmacy gets the disease of prescribed medicine from the expert system.

Alternate Flow:

If medicine are not available it will pass the information as no medicine available

Precondition:

If prescribed medicine is available in pharmacy expert system must generate the required code.

Postcondition:

If prescribed medicine is available in pharmacy then expert system must load the data that is available.

**EXPERT SYSTEM:**

Basic Flow:

It will get symptoms and information from medical database to diagonise disease

Alternate Flow:

If any of the condition fails then system will exit.

Precondition:

Medical database and symptoms of patient should be present

Postcondition:

Prescribe the medicine to the patient from expert system to the patient.

**MODEL DATABASE:**

Basic Flow:

Medical database contains the backup and additional details which is not there in expert system.

Alternate Flow:

If medical database from expert system is not validated in medical database then first we have to update them

Precondition:

Medical database must contain some basic medicine stored in the memory of the system or computer

Postcondition:

If the details which is not present in expert system contained in database then we can extract information.

**3.UML DIAGRAM:**

**3.1 Usecasediagram:**

